

LHMP ANNEX

City of Sunnyvale

Introduction

Sunnyvale, California is located in the heart of Silicon Valley, 44 miles south of San Francisco and 10 miles northwest of San Jose. It is situated on the San Francisco peninsula in Santa Clara County. The City of Sunnyvale has a population of 133, 215 people, based on the 2000 census¹, which makes it the fifth largest city in San Francisco Bay Area and the second largest city in Santa Clara County. The City's total adopted budget for fiscal year 2004/2005 is \$220,570,638.

The City of Sunnyvale's unique way of budgeting is part of the City internationally recognized Planning and Management System. The Sunnyvale budget looks ahead for many years, anticipating income and expenses over a long-term perspective. Approximately 85% of the FY 2004/2005 budget will go toward the provision of services that ensure Sunnyvale citizens and businesses enjoy well-maintained streets, clean parks, first-rate library services and a safe, secure community. The City has one the lowest crime rates in the nation for cities with population over 100,000.

The City of Sunnyvale employs approximately 865 people. Included in the employee population are 285 Public Safety employees, of which 217 are sworn officers. Sunnyvale Public Safety is unique, in that the department has fully integrated police and fire functions where officers are cross trained in both the police and fire disciplines.

The Planning Process

This process of preparing this plan was familiar to the City of Sunnyvale. The City has a Safety Element to its General Plan last updated in 1993 that includes a discussion of fire, earthquake, flooding, and landslide hazards. In addition, the City routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards). The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the City were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general "kick-off" meeting. In addition, the City has provided written and oral comments on the multi-jurisdictional plan. Finally, the City provided information on facilities that are viewed as "critical" to ABAG.

¹ For complete Census information on this city, see <http://www.bayareacensus.ca.gov/>.

Key City staff met to identify and prioritize mitigation strategies appropriate for the City. Staff involved in these meetings included representatives from Public Safety (Police, Fire, Office of Emergency Services), Public Works (Administration, Engineering, Field Services, Transportation and Traffic, Water Pollution Control Services), Community Development (Building, Planning, Housing), Human Resources, Information Technology and Parks and Recreation (Facilities). Prior to the first meeting, appropriate City departments were identified. During the meetings each mitigation strategy was reviewed in the light of general priorities and existing programs. At subsequent meetings, designated department representatives identified preliminary budgets and potential funding sources for strategies of specific interest.

The City provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by City staff at the City Council meeting on April 26, 2005. The City Council adopted the resolution and the plan at that same meeting. The mitigation strategies will become an implementation appendix to this Safety Element.

Hazard and Risk Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). Except for wildfires, landslides and tsunamis, these hazards also impact this community. The City of Sunnyvale is inland, urban with no grasslands, and relatively flat with no hills. Therefore, wildfires, landslides and tsunamis do not impact our community.

While the City has undertaken a number of general hazard mapping activities since the first Safety Element was prepared by the City, all of these maps are less detailed and are not as current as those shown on the ABAG website at <http://quake.abag.ca.gov/mitigation/>.

Information on disasters declared in Santa Clara County is at <http://quake.abag.ca.gov/mitigation/disaster-history.html>.

The City examined the hazard exposure of City urban land based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 12,362 urban acres in the City,

- ◆ No acres are within the California Geological Survey (CGS) earthquake fault study zone;
- ◆ 7589 acres are in the highest two categories of shaking potential and an additional 4772 acres are in the third highest category;
- ◆ Six acres are within the CGS earthquake-induced landslide study zone;
- ◆ 9356 acres are in areas of moderate, high, or very high liquefaction susceptibility; 6015 acres are within the CGS earthquake liquefaction study zone;
- ◆ 771 acres are in the 100-year flood plain, while no additional acres are in other flood-prone areas;
- ◆ 2780 acres are subject to dam inundation;
- ◆ No acres are in areas of existing landslides;
- ◆ Four acres are subject to high, very high, or extreme wildfire threat (because of the urban nature of the City), and 980 acres are in wildland-urban interface threat areas.

The ABAG map indicates pockets of wildland urban interface areas within the City and some of these areas appear to be inaccurate. The areas identified on the ABAG map appear to be urban parks or schools. Additionally, there are several areas in the western portion of the City along Stevens Creek, which may be a wildland urban interface that is not indicated on the ABAG map.

- ◆ Drought, though a potential problem in the City of Sunnyvale, is not fully assessed. The City will be working with ABAG and various water supply agencies on this issue.

The City also examined the hazard exposure of infrastructure based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 368 miles of roadway in the City,

- ◆ No roadways, Santa Clara Valley Transportation Authority (VTA), or railroads are within the CGS earthquake fault study zone;
- ◆ 219 miles of roadway are in the highest two categories of shaking potential; an additional 149 miles of roadway are in the third highest category; four miles of Santa Clara VTA are in the highest two categories of shaking potential; three miles of railroads are in the highest two categories of shaking potential while one mile is in the third highest category;
- ◆ No roads, Santa Clara VTA, or railroads are within the CGS earthquake-induced landslide study zone;
- ◆ 213 miles of roadway are in areas of moderate, high, or very high liquefaction susceptibility; no miles of Santa Clara VTA are in areas of moderate, high, or very high liquefaction susceptibility; four miles of railroads are in areas of moderate liquefaction susceptibility; 170 miles of roadways, four miles of Santa Clara VTA, and two miles of railroads are within the California CGS earthquake liquefaction study zone;
- ◆ 18 miles of roadway are in the 100-year flood plain; while no miles are in other flood-prone areas; four miles of VTA Light Rail System are in the City; however no miles are in the 100-year flood plain or other flood-prone areas; four miles of railroad are in the City with one mile in the 100-year flood plain and no miles in other flood-prone areas;
- ◆ 73 miles of roadway is in an area subject to dam inundation; no miles of Santa Clara VTA, or railroad are subject to dam inundation;
- ◆ No roads, Santa Clara VTA, or railroads are in areas of existing landslides;
- ◆ No miles of roadway, Santa Clara VTA, or railroads are subject to high, very high, or extreme wildfire threat; 29 miles of roadway and no miles of Santa Clara VTA, or railroads are in wildland-urban interface threat areas. This information is based on the ABAG map.
- ◆ Drought, though a potential problem throughout the City of Sunnyvale, is not fully assessed. The City will be working with ABAG and various water supply agencies on this issue.

Finally, the City examined the hazard exposure of critical health care facilities, schools, and critical facilities (City-owned, County-owned, and Special District) buildings based on the

information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. Of the critical facilities in the City,

- ◆ No critical health care facilities, schools, critical facilities, or bridges/interchanges are within the CGS earthquake fault study zone;
- ◆ Four critical health care facilities, 13 schools, 35 critical facilities, and 33 bridges/interchanges are in areas of the highest two categories of shaking potential; four critical health care facilities, 16 schools, 38 critical facilities, and four bridges/interchanges are in third-highest category of shaking potential;
- ◆ No critical health care facilities, schools, critical facilities, or bridges/interchanges are within the CGS earthquake-induced landslide study zone;
- ◆ Six critical health care facilities, 19 schools, 59 critical facilities, and 30 bridges/interchanges are in areas of moderate, high, or very high liquefaction susceptibility; 1 critical health care facility, ten schools, 29 critical facilities, and 21 bridges/interchanges are within the CGS earthquake liquefaction study zone;
- ◆ No critical health care facilities or critical facilities are in either the 100-year flood plain or in other flood-prone areas; one school and one locally owned bridge/interchange are in the 100-year flood plain;
- ◆ Four critical health care facilities, ten schools, 18 critical facilities, and five bridges/interchanges are in an area subject to dam inundation;
- ◆ No critical health care facilities, schools, critical facilities, or bridges/interchanges are in areas of existing landslides;
- ◆ Three critical health care facilities, one school, eight critical facilities, and three bridges/interchanges are in wildland-urban interface threat areas. This information is based on the ABAG maps and does not take into account any potential facilities along Stevens Creek, which may be a wildland-urban interface threat area.
- ◆ Drought, though a potential problem throughout the City of Sunnyvale, is not fully assessed. The City will be working with ABAG and various water supply agencies on this issue.

In spite of the areas of the City located in flood-prone areas, there are no repetitive loss properties in the City based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>.

The City plans to work with ABAG during 2005 to improve the risk assessment information being compiled by ABAG by providing information on unreinforced masonry buildings and soft-story apartments located in the City.

At this time, the City is unable to provide data summarizing each hazard's impact on level of damage to buildings, infrastructure and critical facilities. Plans are in place to work with ABAG in developing the data in 2005 and early 2006 as specified in ABAG's Local Hazard Mitigation Plan Annex. As these impacts are not fully developed, the City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), flooding and wildfire are more important than tsunamis and landslides. Certainly, the most recent study of the Sunnyvale's water system by G&E Engineering (2004) indicates that our system has major seismic vulnerabilities. The seismic hazards include not only ground shaking, but soil effects (liquefaction, lateral spreading, settlement) as well.

Mitigation Activities and Priorities

As a participant in the ABAG multi-jurisdictional planning process, City of Sunnyvale staff assisted in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The mitigation strategies list was reviewed by City officials representing Public Safety (Police, Fire, Office of Emergency Services), Public Works (Administration, Engineering, Field Services, Transportation and Traffic, Water Pollution Control Services), Community Development (Building, Planning, Housing) Human Resources, Information Technology and Parks and Recreation (Facilities) on March 23 and 24, 2005. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

In the City of Sunnyvale, many of the strategies are existing programs already a part of the planning process through the Project Review Committee, building and fire code enforcement, and development of the City's General Plan. New activities will be identified as part of this Annex will be incorporated into these existing mechanisms. As more strategies are identified the information, where appropriate, will also be incorporated into the City's Seismic Safety-Safety Sub-Element. Other activities will require funds that have not been identified. The City will be working to identify potential funding sources, including capital projects and federal and state grants.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing City programs.

These draft priorities were submitted to the City Manager and the City Council for their review on April 26, 2005. The public was provided with an opportunity to comment on the draft priorities. The final strategies (as shown in the attached Table) will become an *Implementation Appendix* to the City's *Safety Element*.

In addition, the City examined the hazard exposure information to City-owned critical facilities supplied by ABAG (All six of the City's fire stations were retrofitted in the mid-nineties.)

The Public Works Department has applied for Pre-Disaster Mitigation grant (City of Sunnyvale Seismic Retrofit Project) to retrofit the City's water system.

In 2004, G&E Engineering conducted a seismic vulnerability study of the City's water system. According to their findings, a magnitude 7.9 earthquake on the San Andreas Fault, would cause Sunnyvale's water system to fail. An earthquake of that magnitude would result in a prolonged loss of water service to over 131, 000 people and the calculated loss of function of the water system for up to 60 days. To mitigate the failure of the water system, the City is proposing to

retrofit the key water infrastructure components at risk. Therefore, City has prioritized this mitigation project strategy as high as outline in the strategies spreadsheet.

The Plan Monitoring, Evaluation and Updating Process

The City of Sunnyvale, Department of Public Safety, Office of Emergency Services will ensure that **monitoring** of the Annex will occur. The plan will be monitored on an on-going basis. However, major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. The Office of Emergency will gather together representatives from Public Safety, Public Works, Parks and Recreation, Community Development and Human Resources to **evaluate** the Annex in light of technological and political changes or significant events that may have occurred in the past year. The Annex will be placed on the Executive Leadership Team's (city department heads) agenda at least once a year during the month of April. These groups will recommend changes to the plan as necessary.

The City of Sunnyvale is committed to reviewing and **updating** this Annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The City's Department of Public Safety, Office of Emergency Services will contact ABAG four years after the Local Hazard Mitigation Plan is approved to ensure ABAG will undertake the update process. If so, the City plans at this time to participate in the multi-jurisdictional Plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other options for complying with the Disaster Mitigation Act of 2000 will be considered by the City.

Finally, the **public** will continue to be involved when the plan is updated and, as appropriate, during the monitoring and evaluation process. They will be given the opportunity to make comments about the plan during a City Council meeting or at a Council study session.